--ABSTRACT OF THE DISCLOSURE

A circuit of an adaptive slope compensator prevents instability in the current mode converter operating under a continuous mode. A timing capacitor, charged by a programmable current source, is used to generate a slope signal. The timing capacitor is discharged by a switching signal via a switching diode connection. The programmable current source is implemented by a transistor and three bias resistors. A voltage feedback signal of the converter is taken as an input to the programmable current source to control the slew rate and magnitude of the slope signal in response to the variations of the input voltage and the output power of the converter. The slope signal is added to a sensed current loop of the converter through an output diode and a resistor in series for providing necessary slope compensation.--